

Factors Related To Psychiatric Hospitalization and Repeated Crisis Service Use By Dually- Diagnosed Persons

**Meeyoung Oh Min, Ph.D.
Case Western Reserve University
Cleveland, Ohio**

Statement of the Research Problem

This study examines factors associated with psychiatric hospitalization and repeated crisis service use of persons who are dually-diagnosed with persistent mental illness and co-existing substance use disorder. Although previous research has found that persons with a dual diagnosis tend to rely on costly hospital and crisis services to relieve their acute symptoms (Bartels et al, 1993; Song, Biegel, Johnsen, & Dowhower, 1995), few studies have examined variability within the dual diagnosis population. Identifying characteristics that differentiate dually-diagnosed persons who are prone to use psychiatric hospitalization and crisis services from those who are not, can help service providers to develop performance measures that can be used to evaluate current and future services for this population.

Research Background and Research Questions

The conceptual framework for this study was derived from 1) the health service utilization model of Andersen-Newman (1973), 2) the concept of social control (Cuffel, 1997; Greenley & Mullen, 1990; Liska, 1992), and 3) the characteristics of people with a dual diagnosis (Ford, Snowden, & Walser, 1991; Garnick et al., 1996; Mowbray et al., 1997; Swanson et al, 1997). Based on the conceptual framework, independent variables were categorized into need, social control, and socio-demographic factors. Need factors, which refer to client vulnerability, include severity of mental illness, severity of substance use, and history of psychiatric hospitalization. Social control factors refer to reactions to symptoms of mental illness to maintain social conformity and social order, which include disruptive behavior as a presenting problem and referral source. Socio-demographic factors are individual characteristics that produce differences in the

tendency to use services, including age, gender, race, living arrangement, and source of income. Thus, the research question of this study is: What is the impact of need, social control, and socio-demographic vulnerability factors on 1) psychiatric hospitalization and on 2) the number of repeated crisis service use by persons with a dual diagnosis?

Methodology

This study employs a longitudinal, retrospective design using secondary data. It utilizes administrative data from the County Mental Health Board, of 1,613 adult consumers who received face-to-face crisis services during a period of one year (from 7/1/96 to 6/30/97), and who had a diagnosis of mental disorder. Each consumer was followed for 12 months following the initial crisis service to determine 1) whether a psychiatric hospitalization occurred and, if it did, at what point in the 12-month it occurred, and 2) whether crisis service was offered more than once, and if it did, how many times it was offered.

Table 1 presents the dependent and independent variables by category of socio-demographic vulnerability, need and social control, as well as the coding scheme for the data. Cox regression for psychiatric hospitalization and Negative Binomial regression analysis for the number of repeated crisis service use are employed in this study. Cox regression permits time-sensitive estimation of the impact of independent variables on the dependent variable by translating the length of time it takes an event (in this study psychiatric hospitalization) to occur into a rate expressing the speed at which it occurs. Negative binomial regression is used because the number of crisis service use is a count variable whose distribution is highly skewed. The Statistical Analysis System (release 7.0 for Windows) was used to conduct the analysis.

Table 1: Variables and Measures

Variables	Coding
Dependent variables	
Time to the first hospitalization	Number of days
Number of repeat use of crisis service	Number of occurrences of repeated crisis service use
Independent variables	
Socio-demographic vulnerability factors	
Age	Age when the person used the crisis service
Gender	Male = 0; Female = 1
Race	White = 0; African American, Other race = 1
Living arrangement	Own home = 0; Friend/Relative home, Homeless, Other/Unknown = 1
Source of income	Employment = 0; Public support, Personal support, None = 1
Need factors	
Severity of mental illness	Low = 0; High = 1
Severity of substance-related disorder	None = 0; Low = 1; High = 2
Number of previous hospitalization	Number of previous psychiatric hospitalizations for the past five years in both state and private hospitals
Social control factors	
Disruptive behavior as a presenting problem	No = 0; Yes = 1
Source of referral	Self = 0; Family/Friend, Treatment facility, Legal system, Other/Unknown = 1

Results

The initial descriptive analysis of the sample revealed that 48.5% of the sample was dually-diagnosed with mental illness and substance use disorder. The study sample ranged in age from 18 to 95 years, with a mean age of 37.4 (SD=13.2). Persons with a dual diagnosis were younger, more likely to be male, more likely to be homeless, more likely to have no income, and tended to be African-American as compared to those with a mental disorder only. However, persons with a dual diagnosis in this sample were not more disruptive than those with a mental disorder only. Also, people with a dual diagnosis were more likely to be hospitalized and more likely to use crisis service repeatedly and frequently as compared to persons with a mental disorder only, as established in the literature. About 44% of persons with a dual diagnosis were hospitalized within one-year of receiving crisis services, as compared to 26% of persons with a mental disorder only. About 31% of persons with a dual diagnosis used crisis services repeatedly, as compared to 18% of persons with a mental illness. The mean number of occurrences of repeated crisis service use for the dually-diagnosed persons was 0.49 (SD=0.93), as compared to 0.25 (SD=0.61) for mentally disordered persons.

The Cox regression analysis revealed that all need factors were significantly related to hospitalization among persons with a dual diagnosis. Persons with a dual diagnosis who had a high-severity mental illness (i.e., schizophrenia, bipolar, major depression or delusional disorder) were 1.8 times more likely to be hospitalized than the dually-diagnosed with a low-severity mental illness. Persons with a dual diagnosis who had a high-severity substance-related disorder (i.e., substance-induced disorder or substance dependence) were 1.5 times more likely to be hospitalized than those with a low-severity substance-related disorder (i.e., substance abuse or vulnerable substance use). For each one-time increase in previous hospitalization, the risk of hospitalization increased by 8.2%. Social control factors were also related to psychiatric hospitalization. Persons with a dual diagnosis who presented with disruptive behavior were 1.4 times more likely to be hospitalized than those who presented with non-disruptive behavior. Persons who were referred by a treatment facility were 1.7 times more likely to be hospitalized than those who were self-referred. Few socio-demographic vulnerability factors were significantly related to hospitalization. Persons with a dual diagnosis who rely on public support were 1.8 times more likely to be hospitalized than persons with a dual diagnosis who did not rely on public support. Further, the relative hazard for hospitalization of persons with a dual diagnosis who rely on public support increased with time, reflecting an increasing risk of hospitalization relative to those who did not rely on public support as time went on. Also, when African-Americans did not have any income, they were more likely to be hospitalized.

The negative binomial analysis showed that two need factors, a high-severity mental illness and previous psychiatric hospitalization, were significantly related to repeated crisis service use among persons with a dual diagnosis. Having a high-severity mental illness increased the number of crisis services by a factor of 1.5. For each one-time

increase in previous psychiatric hospitalization, the number of repeated crisis service use increased by 11.2%. However, severity of substance-related disorder was not significantly related to the repeated use of crisis service. None of the social control factors were related to repeated crisis service use. Only the interaction term of disruptive behavior and the legal system as a source of referral was significantly related to repeated crisis service use. When persons with a dual diagnosis were referred by personnel from the legal system due to their disruptive behaviors, the number of repeated crisis service use was reduced by 74.3%. Two socio-demographic vulnerability variables were related to the number of repeat crisis service uses: other race and other living arrangement. Being neither White nor African-American reduced the number of repeat crisis service use by 64.5%. Persons with a dual diagnosis who have 'other' living arrangements were more likely to use crisis services repeatedly by a factor of 1.7.

Utility for Social Work Practice

This study suggests the importance of conducting a routine assessment of a dual diagnosis to this population; developing separate treatment modalities based on the severity of substance use disorder; improved accessibility to inpatient services; coordinating three major systems- mental health, substance-abuse and legal- to enhance treatment effectiveness and efficiency.

References

- Andersen, R., & Newman, J. F. (1973). Societal and individual determinants of medical care utilization in the United States. *Milbank Memorial Fund Quarterly*, 51, 95-124.
- Bartels, S. J., Teague, G. B., Drake, R. E., Clark, R. E., Bush, P. W., & Noordsy, D. L. (1993). Substance use disorder in schizophrenia: Service utilization and costs. *The Journal of Nervous and Mental Disease*, 181, 227-232.
- Cuffel, B. (1997). Disruptive behavior and the determinants of costs in the public mental health system. *Psychiatric Services*, 48, 1562-1566.
- Ford, L., Snowden, L. R., & Walser, E. J. (1991). Outpatient mental health and the dual-diagnosis patient: utilization of services and community adjustment. *Evaluation and Program Planning*, 14, 291-298.
- Garnick, D. W., Hendricks, A. M., Drainoni, M., Horgan, C. M., & Comstock, C. (1996). Private sector coverage of people with dual diagnoses. *The Journal of Mental Health Administration*, 23, 317-328.
- Greenley, J. R. & Mullen, J. A. (1990). Help seeking and the use of mental health services. In J. R. Greenley (Ed.), *Research in community and mental health*. vol. 6. Mental disorder in social context (pp. 325-350). London, England: JAI Press.
- Liska, A. E. (1992). Introduction to the study of social control. In A. E. Liska (Ed.), *Social threat and social control* (pp. 1-29). Albany, NY: State University of New York.
- Mowbray, C. T., Ribisl, K. M., Solomon, M., Luke D. A., & Kewson, T. P. (1997). Characteristics of dual diagnosis patients admitted to an urban, public psychiatric hospital: An examination of individual, social, and community domains. *American Journal of Drug and Alcohol Abuse*, 23, 309-326.
- Song, L., Biegel, D. E., Johnsen, J. A., & Dowhower, D. (1995). Use of community based mental health services and psychiatric hospitalization by adults with severe mental disability: A secondary data analysis. Final report to the Cuyahoga County Community Mental Health Board.
- Swanson, J., Estroff, S., Swartz, M., Borum, R., Lachicotte, W., Zimmer, C., & Wagner, R. (1997). Violence and severe mental disorder in clinical and community populations: The effects of psychotic symptoms, comorbidity, and lack of treatment. *Psychiatry*, 60, 1-22.